What is claimed is:

1. A storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from at least one information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said apparatus comprising:

an exclusive control section performing exclusive control of a file when said channel controller receives from said information processing apparatus said requests to input and output data of the file.

2. A storage device controlling apparatus according to claim 1, wherein said requests to input and output data are sent in accordance with at least two types of network file system protocols, and if, during said exclusive control which is performed upon accepting one of said requests to input and output data sent in accordance with one of network file system protocols, another said request to input/output data sent in accordance with another network file system protocol is accepted, an effect of said exclusive control is also reflected on the another request to input/output data.

3. A storage device controlling apparatus according to claim 1,

wherein a memory area of said storage device is managed in a logical volume serving as a unit, the logical volume being

logically set on the memory area, and

said I/O processor performs exclusive control of said logical volume in response to said exclusive control of the file.

4. A storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said apparatus comprising:

a section receiving from said information processing apparatus a request for information specifying a storage location of a file on a memory area of said storage device, and sending said information to said information processing apparatus;

a section receiving a request to read data in blocks as units from said information processing apparatus, in which the request is generated based on said information, and outputting an I/O request corresponding to the request to read data to said storage device; and

a section sending data read from said storage device to said information processing apparatus.

5. A storage device controlling apparatus according to claim 4, wherein a plurality of the channel controllers are provided therein, and the channel controllers include at least one enabled to communicate with the information processing apparatus through a LAN and at least one enabled to communicate with the information

processing apparatus through a Fibre Channel.

6. A storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said apparatus comprising:

a section receiving from said information processing apparatus a request for information specifying a storage location of a file on a memory area of said storage device, and sending said information to said information processing apparatus; and

a section receiving a request to write data in blocks as units and data to be written from said information processing apparatus, in which the request is generated based on said information, and outputting to said storage device an I/O request corresponding to the request to write data and the data to be written.

7. A storage device controlling apparatus according to claim 6, wherein a plurality of the channel controllers are provided therein, and the channel controllers include at least one enabled to communicate with the information processing apparatus through a LAN and at least one enabled to communicate with the information processing apparatus through a Fibre Channel.

8. A storage device controlling apparatus including a plurality of channel controllers, each having a circuit board on

which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said apparatus comprising:

a section setting at least one of logical volumes logically set on a memory area of said storage device as a shared logical volume accessible from each of said channel controllers; and

a section performing fail-over based on take-over information of each of said channel controllers, in which the take-over information is stored in said shared logical volume and used when one of said channel controllers takes over processing of another one of said channel controllers.

9. A storage device controlling apparatus according to claim 8, wherein said fail-over is performed in any one of cases where a request to perform said fail-over is received from said information processing apparatus and where a fault occurs in said another channel controller.

10. A storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from at least one information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device,

wherein said file access processing section stores identification information of accessible said information processing apparatus, and accepts said requests to input and output data only in a case where said requests to input and output data are sent from said information processing apparatus for which said identification information is stored.

11. A method of controlling a storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from at least one information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said method comprising the steps of:

receiving said requests to input and output data of a file from said information processing apparatus by said channel controller; and

performing exclusive control of said file.

12. A method of controlling the storage device controlling apparatus according to claim 11, wherein said requests to input and output data are sent in accordance with at least two types of network file system protocols, and if, during said exclusive control which is performed upon accepting one of said requests to input and output data sent in accordance with one of the network file system protocols, another said request to input/output data sent in accordance with another network file system protocol is accepted,

an effect of said exclusive control is also reflected on the another request to input/output data.

13. A method of controlling the storage device controlling apparatus according to claim 11,

wherein a memory area of said storage device is managed in a logical volume serving as a unit, the logical volume logically being set on the memory area, and

said I/O processor performs exclusive control of said logical volume in response to said exclusive control of the file.

14. A method of controlling a storage device controlling apparatus including:

a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device; and

a section receiving a request to read data in blocks as units sent from said information processing apparatus, and outputting an I/O request corresponding to the request to read data to said storage device, said method comprising the steps of:

receiving a request for information specifying a storage location of a file on a memory area of said storage device from said information processing apparatus, and sending said information to said information processing apparatus;

receiving said request to read data in blocks as units from

said information processing apparatus, in which the request is generated based on said information;

outputting said I/O request corresponding to said request to read data to said storage device; and

sending data read from said storage device to said information processing apparatus.

15. A storage device controlling apparatus according to claim 14, wherein a plurality of the channel controllers are provided therein, and the channel controllers include at least one enabled to communicate with the information processing apparatus through a LAN and at least one enabled to communicate with the information processing apparatus through a Fibre Channel.

16. A method of controlling a storage device controlling apparatus including:

a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data sent in files as units from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device; and

a section receiving a request to write data in blocks as units sent from said information processing apparatus, and outputting an I/O request corresponding to the request to write data to said storage device, said method comprising the steps of:

receiving a request for information specifying a storage location of a file on a memory area of said storage device from

said information processing apparatus, and sending said information to said information processing apparatus;

receiving said request to write data in blocks as units and data to be written from said information processing apparatus, in which the request is generated based on said information; and

outputting said I/O request corresponding to said request to write data and said data to be written to said storage device.

17. A storage device controlling apparatus according to claim 16, wherein a plurality of the channel controllers are provided therein, and the channel controllers include at least one enabled to communicate with the information processing apparatus through a LAN and at least one enabled to communicate with the information processing apparatus through a Fibre Channel.

18. A method of controlling a storage device controlling apparatus including a plurality of channel controllers, each having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from an information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said data to input and output data to a storage device, said method comprising the steps of:

setting at least one of logical volumes logically set on a memory area of said storage device as a shared logical volume accessible from each of said channel controllers; and

performing fail-over based on take-over information of each of said channel controllers, in which the take-over information

is stored in said shared logical volume and used when one of said channel controllers takes over processing of another one of said channel controllers.

19. A method of controlling the storage device controlling apparatus according to claim 18, wherein said fail-over is performed in any one of cases where a request to perform said fail-over is received from said information processing apparatus and where a fault occurs in said another channel controller.

20. A method of controlling a storage device controlling apparatus including a channel controller having a circuit board on which a file access processing section and an I/O processor are formed, the file access processing section receiving requests to input and output data in files as units sent from at least one information processing apparatus via a network, the I/O processor outputting I/O requests corresponding to said requests to input and output data to a storage device, said method comprising the steps of:

storing identification information of accessible said information processing apparatus by said file access processing section; and

accepting said requests to input and output data only in a case where said requests to input and output data are sent from said information processing apparatus for which said identification information is stored.